

Remarks/Arguments

Applicants' remaining claims are 2-4. Claim 1 has been cancelled and claim 2 rewritten in independent form including all original limitations along with the additional requirements that the ethylene content of the monomer mixture is limited to 0.5 to 1.0 weight percent of the monomer mixture (source pg. 5, line 13) and the transition metal is hafnium (source pg. 5, line 27). Claim 3 is unmodified from the original. Claim 4 has been amended to depend from claim 2 and to specify that the monomer mixture comprises ethylene and propylene.

The foregoing amendment to claim 2 is believed sufficient to restore patentability under 35 USC §112, 35 USC §102(e) and 35 USC §103(a) over the teachings of all the cited references, in as much as the use of extremely limited quantities of ethylene in a polymerization of C₃₋₈ olefins using specific hafnium catalysts is neither taught nor suggested by any reference of record. As disclosed in the specification at page 5, lines 13-25, the presence of a small quantity of ethylene in the monomer mixture allows the attainment of higher molecular weight polymers, without excessive loss of what are essentially C₃₋₈ olefin homopolymer properties.

The rejection under 35 USC §112, second paragraph, has been overcome by removing the objectionable language from claim 2. The rejection under 35 USC §102(e) is believed to be overcome by specifying in Applicants' broadest claim the present specific ligand substitution pattern, the range of ethylene content in the monomer mixture, and hafnium as the transition metal. The polymers of Peterson contained a higher ethylene content in the monomer mixture, 25 to 90 mole percent (16-52 weight percent) (col. 9, line 52) along with a clear preference for zirconium complexes, to prepare high ethylene content interpolymers, having elastomeric properties.

Finally, Boussie et al., cited with respect to the rejection under 35 USC §103(a) of the present claims is believed to now be distinguished in as much as the limited quantity of ethylene required by the present claims, although falling within the generic teachings of the reference of about 0.2-30 weight percent, never-the-less falls outside the preferred and more preferred ranges of about 1 to about 20 weight percent, about 2 to about 15 weight percent and most specifically about 5 to about 12 weight percent (col. 78, lines 31-49). The present range defines a species within the generic disclosure of the reference. The teachings of the reference taken as a whole suggest a clear preference for the use of higher quantities of ethylene than are currently specified by applicants' claims. Applicant's have discovered instead that polymers having crystalline melting points nearly as high as the corresponding homopolymer can be attained while producing polymers having much higher molecular weights if hafnium complexes are instead employed and an extremely small amount of ethylene is present during the polymerization.

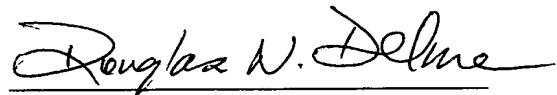
With particular regard to Applicants' claim 3, the uniquely substituted aryl group (2,6-diisopropylphenyl) on the amide, is nowhere disclosed by the Boussie et al., reference. (It should be noted, however, that the corresponding dimethyl and bis(dimethylamido) compounds of Applicants' claims are catalysts J and H,

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respectively, of USP 6,960,635 (not cited in the present rejection but equivalent to WO03/04021 of the international search report)). The ethylene limits of the present claim (0.5 to 1 percent) are believed to adequately distinguish the present invention from the teachings of the '635 patent.

In view of the foregoing amendments and arguments, it is believed that all of applicant's claims 2-4 are now in condition for allowance. Reexamination of all applicants' remaining claims accordingly is requested.

Respectfully submitted,



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